



Wheat Planning Conference

***WHEAT PLANNING CONFERENCE
August 6, 2013
Gray County Extension Office***

- 9:30 a.m. Registration
- 10:00 a.m. Efficient Wheat Production Practices for the High Plains
Clark Neely, Ph.D., Extension Specialist
- 10:45 a.m. Wheat Seed Treatment Updates
Dr. Ed Bynum, Extension Entomologist
- 11:15 a.m. Wheat Variety & Irrigation Updates
Brandon McGinty, CEA-Ag/NR Gray County
- 12:00 noon Lunch
Sponsored By
- 12:45 p.m. Insurance Updates & Market Outlooks
Mark Welch, Extension Economist
- 1:30 p.m. Wheat Disease & Disease Research
Jacob Price, Senior Research Associate Plant Pathology
- 2:15 p.m. Adjourn

2.5 CEU's will be offered—.5-IPM and 2 General

There is a fee of \$10.00 for this conference. A noon meal will be provided.

Lygus bugs in the Texas High Plains and their threat to cotton

There are several species of Lygus reported to infest different crops including cotton. However, the dominant species of Lygus bugs we normally find in High Plains cotton is the western tarnished plant bug (*Lygus hesperus*), which accounts for approximately 97% of our Lygus population. Adult insects are about ¼ inch long, oval, greenish in color with reddish brown to black markings on wings and a prominent black triangle in the back. Immatures or nymphs look similar except they do not have wings. Their sizes vary with the developmental stage, but they are greenish in color, have black dots on the back and tip of the antenna is reddish in color.

Lygus bugs are one of those insect pests which can be damaging during the critical developmental stages of cotton fruit; from squaring to boll formation. Both adults and immatures are capable of causing injury to cotton fruits. Feeding injury during the early crop development stages can result in significant square loss, but this situation is not typically observed in High Plain cotton where Lygus are more commonly recognized as a mid to late season cotton pest. When Lygus feed on either developing flowers or bolls, they are capable of damaging the inner contents of a fruit such as anthers in case of squares/flowers and developing seeds in case of young bolls. However, as boll development progresses, the outer wall of the bolls become hard and become less susceptible to Lygus injury. In terms of heat units, cotton beyond 350 heat unit after “cut-out” (i.e., 5 or fewer mainstem nodes above white flower) is considered to be safe from Lygus.

Typically, we observe our Lygus populations being more noticeable in cotton after peak flowering to the late boll development stage. However, their populations may build-up in cotton even before flowering and in that situation, the cotton crop is more vulnerable to damage by this insect. A research study conducted by Apurba Barman and Megha Parajulee for three years (2006 to 2007) in Lubbock quantified the amount of fruit loss and lint yield difference caused by artificially released Lygus at two different densities (1PP = one Lygus bug per plant and 3PP = three Lygus per plant) as compared to plots of undisturbed crop which were either not sprayed (NC = natural control, no spray and no artificial Lygus release) or protected through regular pesticide applications (SC = three weekly sprayings). It was found that the extent of fruit loss four weeks after three consecutive Lygus releases could be as high as 38% under high insect pressure (3 Lygus per plant) and 24% under low insect pressure. Although it was not proportionate to the amount of fruit loss, the lint yield was significantly less on plots receiving artificial Lygus releases. This study also indicates that the presence of Lygus in cotton fields during the squaring stage can reduce lint yield in the realm of 100 lbs/acre. Details of this study can be found in the [article recently published in the Journal of Economic Entomology](#) by the Entomological Society of America.

The recommended action threshold for Lygus in High Plains cotton varies with the crop stage and method of sampling. Several sampling methods such as drop cloth, sweep net and beat-bucket can be used to assess the abundance of Lygus in cotton fields. For more information on sampling and the action threshold, consult the Texas A&M AgriLife Extension publication, “[Managing Cotton Insects in High Plains, Rolling Plains, and Trans Pecos Areas of Texas](#)”.

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| Lygus action threshold | | |
|---------------------------------------|--|--|
| Cotton stage | Sampling method | |
| | <i>Drop cloth</i> | <i>Sweep net</i> |
| First two weeks of squaring | 1-2 per 6 row-feet with unacceptable square set | 8 per 100 sweeps with unacceptable square set |
| Third week of squaring to first bloom | 2 per 6 row-feet with unacceptable square set | 15 per 100 sweeps with unacceptable square set |
| After peak bloom | 4 per 6 row-feet with unacceptable fruit set first 4-5 weeks | 15-20 per 100 sweeps with unacceptable fruit set first 4-5 weeks |

Cotton fields should be regularly monitored so that early Lygus population build-up can be detected. Studies in other parts of the country where Lygus is a pest of different crops suggest that this insect could be difficult to control. Research conducted in the Mississippi Delta region indicates that *Lygus lineolaris* (another close relative of our western tarnished plant bug) has developed resistance to acephate. However, in the Texas High Plains, there are no issues of acephate resistance in Lygus populations. Luckily, Lygus pressure in High Plains cotton has been fairly low and area specific, therefore our populations have never received multiple, area-wide insecticide applications as occurs in some other regions where Lygus is more troublesome. Insecticides that can be used for managing Lygus in cotton are: Centric® 40WG @ 1.25-2.5 oz/acre, Intruder® WSP @ 1.1 oz/acre, Belay® @ 3-6 oz/acre, Orthene® 97S @ 4-16 oz/acre, Carbine™ 50WG @ 1.7-2.8 oz/acre, Admire Pro® 1.3-1.7 oz/acre and Transform® WG 1.5-2.25 oz/acre. Under heavy Lygus pressure, use of the highest dose is recommended to obtain satisfactory control.

Another aspect of Lygus management is understanding the abundance and phenology (growth stage) of alternate host plants of Lygus in the landscape. Alfalfa is commonly recognized as the most preferred host for Lygus and the presence of volunteer alfalfa (present along roadways) can attract Lygus and allow them to build up their population densities. However, alfalfa is less abundant in the High Plains landscape, instead there are several other host plants such as pigweed, Russian thistle, smartweed, woollyleaf bursage and yellow sweetclover that can be found in and around the perimeters of our cotton fields. Among these weed hosts; Russian thistle is a better host in terms of supporting both adults and immatures of Lygus. This was found through a two-year Texas High Plains study conducted by Stanley Carroll and Megha Parajulee in which dozens of prevalent weed species in the landscape were sampled for adult and immature Lygus bugs. Thus, checking some of these weed species near cotton fields can give us an idea if there is any potential for a future invasion by Lygus into the cotton field. AB



Adult and immature (nymph) of western tarnished plant bug (*Lygus hesperus*). Note the triangle on the back in adult and black dots on nymph. (Photo credit: Cotton Entomology Program, Lubbock, TX)



Symptom of external injury to cotton bolls by *Lygus* (picture on the left). Comparison of healthy and *Lygus* infested cotton bolls after cutting the bolls open (picture on the right). (Photo credit: Cotton Entomology Program, Lubbock, TX)

Threat assessment after the rain; What a difference a general rain makes. Areas that received significant rainfall last week now have a reduced spider mite risk. Adding to that, the hot and cool and hot again temperature cycles are more disruptive to spider mite development than a constant hot temperature regime. The higher humidities of the last few days have also increased the chance of *Neozygites* fungi establishing themselves as biological control agents. So the spider mite threat is less today than when we started the week. That being said, all corn fields should be scouted weekly for spider mites as they approach tassel. We are not safe; Monti Vandiver, IPM Agent in Bailey and Parmer counties, has reported that we had some fields where the mite populations were approaching treatable levels. He is going to reevaluate them after the rain stops. Corn is susceptible to yield loss from spider mite damage until it reaches full dent stage. Dr. Ed Bynum, the Extension Entomologist in Amarillo, is recognized as the Grand Old Man of spider mite knowledge.

Fall armyworm moth numbers are tracking almost identically to those in 2011, a year where we had significant fall armyworm damage in corn and sorghum. It is too early to be sure of what lies ahead, but the recent rains probably won't be much of a factor in reducing fall armyworm numbers. It is true that small to medium sized larvae in whorls can drown with heavy rain, but it is also true that the smaller fall armyworm predators and parasites will drown, too. We have seen many very small parasitic wasps in corn and sorghum in the last week and we think the rain has probably greatly reduced their numbers. If we had to guess, we would predict that we will continue to see the same fall armyworm population growth pattern that we saw in 2011.

Sorghum maturity is spread out this year, and that raises the risk of sorghum midge building up on earlier planted fields then moving progressively to later and later planted fields with higher populations as they go. Sorghum fields should be scouted as they enter into bloom. Since midge females live for only a day, the fields should be re-examined frequently during blooming so there won't be any surprises. RPP

Mid-Season Nitrogen on Grain Sorghum

With rainfall support some producers may now actually consider fertilizing grain sorghum that was planted late. This will depend on the amount of N you might have had on cotton ground that failed. Grain sorghum's requirement is about 2 lbs. of N per acre per 100 lbs. of yield goal. We like for this N to be applied within 30 to 35 days of planting to ensure the N is "in the system" at the time when the all-important growing point differentiation occurs.

If you are irrigated, the bulk of this N should still be applied by 30-35 days after planting, but if you trickle out smaller amounts of N, then you might hold back 20% and fertigate, but for a medium-early maturity hybrid we recommend you still complete N applications with 50 days of planting.

If you have soil test information that indicates significant soil nitrate N then it should be credited toward your crop requirement. Be sure in your applications, however, to minimize root pruning with knife rigs or rolling coulters.

Iron deficiency is related to caliche soils and outcroppings in West Texas (usually pH \geq 7.9) or frequent alkali spots in fields (Coastal Bend, South Texas). This is a particular concern for sorghum. Chalky soils that appear whitish across the field should probably never have grain sorghum, and it is prohibitively expensive to correct it. Many fields, however, simply experience some degree of iron deficiency, the classical condition of interveinal chlorosis where the veins of the younger leaves remain green and the leaves are yellow between the veins. In the worst of cases, the leaves are almost completely bleached out and the plants do not grow.

Iron deficiency can also be induced temporarily due to water-logged conditions and possibly fast growth in young sorghum (root system not well established yet) or a possible response to herbicide (replant situation where residual is present or a subsequent post-emerge application). In modest cases where iron deficiency occurs, as the root volume expands iron deficiency diminishes. On the other hand, strong cases of iron deficiency in grain sorghum may merit treatment at as early as 10 to 14 days after emergence.

Iron deficiency compared to N deficiency. Iron deficiency is normally expressed mostly on newest leaves, and iron is immobile within the plant. When iron becomes available again, newly emerging leaves will again be dark green. Older chlorotic leaves will not green up unless they receive a direct foliar feed. In contrast, N is mobile in the plant, and will move to the youngest leaves from older plant tissues (which may express N deficiency) and shows no striping symptoms.

Most soil tests will flag Fe < 4 ppm as deficient. Currently, there are no economical sources of soil-applied Fe available. Therefore, the only options for correcting Fe deficiencies are to apply foliar Fe sprays in-season or to apply manure for long-term correction. If iron chlorosis has been observed during previous years in a field, iron fertilizer materials may be applied preemptively to the foliage through multiple sprayings early in the season. Table 1 gives suggested foliar treatments to correct iron as well as zinc deficiencies.

Table 1. Suggested sources, rates, and timing of iron foliar sprays.

| Deficiency | Product* | Product/100 gals water | Product/ Acre | Timing |
|------------|--------------------------|---------------------------|------------------------|---|
| Iron | Iron sulfate (20% Fe) | 20 lbs (2.5% solution) | 1 lb. then 2-3 lbs. | 10-14 days after emergence - 5 gals/A over crop row. Follow with additional applications @ 10-14 day intervals @ 10-15 gals/A |
| | Iron chelate (10% Fe) | 8 lbs. (1%) | 0.4-0.5 lbs | Same as above |

*Include a surfactant or other wetting agent. Product composition may vary. Select similar products or adjust mixing ratios to achieve comparable rates of nutrient application.

Source: Updated information based on research results and recommendations through the Texas AgriLife Extension Service Soil, Water and Forage Testing Laboratory.

For further information about iron consult 'Correcting Iron Deficiencies in Grain Sorghum' L---5155, from Texas AgriLife Extension (<http://agrilifebookstore.org>, or contact your local county Extension office). CT

No surprise, wheat seed supply will be very short and/or very expensive. You may have heard that much of the Kansas wheat crop—about the eastern half of the state—busted the bins on yield for thousands of farmers. But the western half of Kansas had reduced yields, and the seedblocks for many of the wheat varieties that we are so short on for the Texas High Plains are most likely grown in western Kansas. So if wheat of a particular variety is in fact available, trucking is going to drive the prices up. And much of the wheat that is available has small seed which needs to be tested for germination, and if it is indeed satisfactory, then it can't be planted as deep due to weak push and emergence (though you may be able to reduce the seeding rate).

Beardless wheat: Expect an especially acute shortage of beardless wheat. Most that is grown for seed in the Texas High Plains as especially Kansas and to some extent Oklahoma don't use it nearly as much. So there will not be the supplies to haul in even if you were willing to pay the cost. And the beardless wheat in the Texas High Plains that did make it to harvest was very poor yielding. Call for seed supplies now. Dairies use a lot of beardless wheat for silage so the demand will be there. Wheat planted for hay and silage should use a grain seeding date (early October in the northwest South Plains; late October in the lower South Plains) where even seeding rates as low as 30 lbs./A (normal size seed) can still produce very good yields. This is in contrast to grazing where higher seeding rates are needed to drive forage growth, especially for fall grazing. CT

Right of Way Program

We will have a Right of Way Program on **Thursday, August 29, 2013** at the Gray County Annex starting at 9:00 a.m. with registration. There will be a \$10.00 registration fee. Topics will include:

- » Herbicides and Weed Controls
- » Identifications of Weeds
- » Drift Management and IPM
- » Laws and Regulations
- » Application Equipment for ROW

Contact Brandon McGinty, CEA-Ag/NR Gray County for more information at 806-669-8033.

Articles submitted by Focus on South Plains Agriculture

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Sincerely,

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